

Translated English of Chinese Standard: HG/T20611-2009

www.ChineseStandard.net

Sales@ChineseStandard.net

Chemical Industry Standard
of the People's Republic of China

HG

HG/T 20611-2009

Replacing HG 20611-1997

Covered Serrated Metal Gaskets for use with Steel Pipe Flanges (PN designated)

钢制管法兰用具有覆盖层的齿形组合垫

(PN 系列)

HG/T 2611-2009 How to BUY & immediately GET a full-copy of this standard?

1. www.ChineseStandard.net;
2. Search --> Add to Cart --> Checkout (3-steps);
3. No action is required - Full-copy of this standard will be automatically & immediately delivered to your EMAIL address in 0~25 minutes.
4. Support: Sales@ChineseStandard.net. Wayne, Sales manager

Issued on: February 5, 2009

Implemented on: July 1, 2009

Issued by: Ministry of Industry and Information Technology of the People's Republic of China

Contents

1. Scope	3
2. Normative References	3
3. General Provisions	3
3.1 Type and Code Name	3
3.2 Nominal Pressure and Nominal Dimension	4
3.3 Usage of Gaskets	4
3.4 Materials	5
4. Dimension	5
5. Technical Requirements	8
6. Inspection	9
7. Labeling	9

1. Scope

This standard specifies the type, dimension, technical requirements, labeling and marking of covered serrated metal gaskets for steel pipe flanges (PN designated).

This standard is applicable to covered serrated metal gaskets for steel pipe flanges specified in HG/T 20592 whose nominal pressure is PN16~PN160.

2. Normative References

The following standards contain provisions which, through reference in this text, constitute provisions of this national standard. For dated reference, subsequent amendments (excluding amending error in the text) to, or revisions of, any of these publications do not apply. However, parties to agreement based on this standard are encouraged to research whether the latest editions of these references are applied or not. For undated references, the latest edition of the normative document is applicable to this national standard.

"Hot-rolled Plain Carbon and Low Alloy Structural Steel Sheets and Strips" GB/T 912

"Hot Rolled Stainless Steel Plate Sheets and Strips" GB/T 4237 "Cold Rolled Stainless Steel Plate Sheets and Strips" GB/T 3280

"Steel Pipe Flanges (PN designated)" HG/T 20592

"Specification for Selection of Steel Pipe Flanges, Gaskets and Bolting (PN designated)" HG/T 20614

"Specification for Flexible Graphite Plates" TB/T 7758.2

"PTFE Sheers" QB/T 3625

3. General Provisions

3.1 Type and Code Name

The type, code name, section form and applicable flange sealing surface of gaskets shall meet the provisions of Table 3.1.

Table 3.3.1 Service Temperature Scope of Gaskets

Serrated metal-ring material		Cladding material		Service temperature scope (°C)
Steel grade	Standard	Name	Reference standard	
0Cr18Ni9(304)	GB/T 4237 GB/T 3280	Flexible graphite	JB/T 7758.2	-200~+650
00Cr19Ni10(304L)		PTFE	QB/T 3625	-200~+200
0Cr17Ni12Mo2(316)				
00Cr17Ni14Mo2(316L)				
0Cr18Ni0Ti(321)				
0Cr18Ni11Nb(347)				
0Cr25Ni20(310)				

When it is used for oxidizing media, the maximum service temperature shall be 450°C.

3.4 Materials

3.4.1 The typical materials for serrated metal ring shall meet the provisions of Table 3.3.1 of this standard; other materials may also be adopted if they are indicated at ordering.

3.4.2 The typical cladding materials are flexible graphite and PTFE plates; other cladding materials may also be adopted if they are indicated at ordering.

3.4.3 The property of flexible graphite/PTFE plates shall meet the provisions of both Table 3.4.3 and Table 3.3.1 of this standard. Recycled materials shall not be used for PTFE.

3.4.4 The materials for integral centring ring shall be the same as that for serrated metal ring. Unless otherwise stated by users, carbon steel can be adopted for mobile centring ring, but the carbon steel shall meet the provisions of GB/T 912. Such surface treatment as spraying, electroplating or others shall be adopted.

Table 3.4.3 Main Performance of Cladding Materials

Item	Flexible graphite	PTFE
Tensile strength (transverse)(MPa)		≥15
Content of chloride ion($\times 10^{-6}$)	≤50	
Melting point(°C)		327±10

4. Dimension

The dimension of gaskets shall meet the provisions of Figure 4, Table 4-1 and Table 4-2. "h" in Figure 4 is the minimum value.

Table 4-1 Dimension of Centring Ring (B type or C type) Gaskets for Raised Face Flanges (mm)

Nominal dimension DN	Serrated metal ring			Outside diameter of centring ringD ₁						Thickness of serrated metal ring T	Thickness of integral centring ring t	Thickness of mobile centring ring t ₁	Cladding thickness s
	Inside diameter D ₃	Outside diameterD ₂											
		PN16~PN40	PN 63~PN160	PN16	PN25	PN40	PN63	PN100	PN160				
10	22	36	36	46			56			4.0	2.0	1.5	0.5
15	26	42	42	51			61						
20	31	47	47	61			72						
25	36	52	52	71			82						
32	46	62	62	82			88						
40	53	69	69	92			103						
50	65	81	81	107			113	119					
65	81	100	100	127			138	144					
80	95	115	115	142			148	154					
100	118	138	138	162	168		174	180					
125	142	162	162	192	194		210	217					
150	170	190	190	218	224		247	257					
200	220	240	248	273	284	290	309	324					
250	270	290	300	329	340	352	364	391	388				
300	320	340	356	384	400	417	424	458	458				
350	375	395	415	444	457	474	486	512	—				
400	426	450	474	495	514	546	543	572	—				
450	480	506	—	555	564	571	—	—	—				
500	530	560	—	617	624	628	—	—	—				
600	630	664	—	734	731	747	—	—	—				
700	730	770	—	804	833	—	—	—	—				
800	830	876	—	911	942	—	—	—	—				
900	930	982	—	1011	1042	—	—	—	—				
1000	1040	1098	—	1128	1155	—	—	—	—				
1200	1250	1320	—	1342	1365	—	—	—	—				
1400	1440	1522	—	1542	—	—	—	—	—	5.0			
1600	1650	1742	—	1764	—	—	—	—	—				
1800	1850	1914	—	1964	—	—							
2000	2050	2120	—	2168	—	—							

1 Generally, the serrated metal ring is integrally constructed. If weld structure is adopted, the following requirements shall be complied with:

- 1) Get approval from the users;
- 2) Complete penetration type shall be adopted as welding seam structure; there shall be no more than two soldered joints and stress-relief heat treatment shall be carried out after welding;
- 3) Before covering the cladding, the serrated form and dimension of the weld part shall be in accordance with other parts.

2 The planeness of serrated metal ring shall be no bigger than 1/100 of the outside diameter of the gasket.

3 The cladding materials shall be fixed firmly on the serrated metal ring so that they won't scale off during the transportation or assembly process. The adhesive used shall have no corrosion to the metallic materials. There shall be no more than two scabbed joints, if overlapping is adopted, the overlap section shall be connected through bias cutting; if abutting is adopted, a thinner cladding material shall be covered at the seam crossing.

4 There shall be proper clearance between the centering groove between the mobile centering ring and serrated metal ring so that when it expands at heating, it will not disturb movement. Welding method may be adopted for mobile centering ring.

5.0.4 Performance

The performance of gaskets shall meet the relevant provisions specified by users.

6. Inspection

6.0.1 The material, dimension, appearance and manufacture of gaskets shall be compliant to the provisions of this standard.

6.0.2 Other inspection requirements may be determined through negotiating with the producers at ordering.

7. Labeling

7.0.1 Labeling and illustration

1 The gasket shall be labeled according to the following provisions:

- 1) Standard name;
- 2) Gasket type (refer to the provisions of Table 3.1 of this standard);
- 3) Nominal dimension (DN);
- 4) Nominal pressure (PN);
- 5) Material code names for serrated metal ring, cladding and mobile centering ring (refer to the provisions of Table 7.0.1). When carbon steel is used for mobile centering ring, its code name may be omitted.

Table 7.0.1 Material Marking and Abbreviated Code Name

Material	Abbreviated code name	Material	Abbreviated code name	Material	Abbreviated code name
0Cr18Ni9	304	0Cr25Ni20	310	Ni- Fe- Cr alloy Incoloy 800	IN 800
00Cr19Ni10	304L	Titanium	TI	Zirconium	ZIRC
0Cr17Ni12Mo2	316	Ni-Cu alloy Monel 400	MON	Flexible graphite	FG
00Cr17Ni14Mo2	316L	Ni-Cu alloy Hastelloy B2	HAST B	PTFE	PTFE
0Cr18Ni10Ti	321	Ni- Mo- Cr alloy Hastelloy C-276	HAST C		
0Cr18Ni11Nb	347	Ni- Cr- Fe alloy Inconel 600	INC 600		

2 Marking illustration:

Covered serrated metal gaskets (C type) for steel pipe flanges whose nominal dimension is DN100, nominal pressure is PN40, 0Cr18Ni9 is used as serrated metal-ring material, flexible graphite is used as cladding material, carbon steel is used for mobile centring ring, its marking is: HG/T 20611 serrated gaskets C 100-40 304/FG

7.0.2 Marking

1 There shall be a permanent marking (e.g.: steel seal) on the centring ring of the gasket. Basic type gaskets shall be marked with a fixed label. The labeling mode (including color code) shall meet the provisions of producers or users. The marking shall contain the following content:

- 1) Name or trademark of the producer;
- 2) Standard No.;
- 3) Nominal dimension (DN);
- 4) Nominal pressure (PN);

5) Material code names for serrated metal ring, cladding and mobile centering ring (refer to the provisions of Table 7.0.1 of this standard). When carbon steel is used for mobile centering ring, its code name may be omitted.

2 According to the users' requirements, the producers may label a color code of serrated metal ring and cladding material around the top circle of the centering ring. The color code shall be determined through negotiation between the users and producers.

END

This is an excerpt of the PDF (Some pages are marked off intentionally)

Full-copy PDF can be purchased from 1 of 2 websites:

1. <https://www.ChineseStandard.us>

- SEARCH the standard ID, such as GB 4943.1-2022.
- Select your country (currency), for example: USA (USD); Germany (Euro).
- Full-copy of PDF (text-editable, true-PDF) can be downloaded in 9 seconds.
- Tax invoice can be downloaded in 9 seconds.
- Receiving emails in 9 seconds (with download links).

2. <https://www.ChineseStandard.net>

- SEARCH the standard ID, such as GB 4943.1-2022.
- Add to cart. Only accept USD (other currencies - <https://www.ChineseStandard.us>).
- Full-copy of PDF (text-editable, true-PDF) can be downloaded in 9 seconds.
- Receiving emails in 9 seconds (with PDFs attached, invoice and download links).

Translated by: Field Test Asia Pte. Ltd. (Incorporated & taxed in Singapore. Tax ID: 201302277C)

About Us (Goodwill, Policies, Fair Trading...): <https://www.chinesestandard.net/AboutUs.aspx>

Contact: Wayne Zheng, Sales@ChineseStandard.net

Linkin: <https://www.linkedin.com/in/waynezhengwenrui/>

----- The End -----